

JPRS 74551

9 November 1979

China Report

AGRICULTURE

No. 59

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REPORT DOCUMENTATION PAGE		1. REPORT NO. JPRS 74551	2.	3. Recipient's Accession No.
4. Title and Subtitle CHINA REPORT: AGRICULTURE, No. 59			5. Report Date 9 November 1979	
7. Author(s)			6.	
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			8. Performing Organization Rept. No.	
12. Sponsoring Organization Name and Address As above			10. Project/Task/Work Unit No.	
			11. Contract(C) or Grant(G) No. (C) (G)	
15. Supplementary Notes			13. Type of Report & Period Covered	
			14.	
16. Abstract (Limit: 200 words) This serial report contains information on agricultural activities in China.				
17. Document Analysis a. Descriptors CHINA Agriculture Weather Statistics Crops Animal Husbandry Forestry Soil Pisciculture b. Identifiers/Open-Ended Terms c. COSATI Field/Group 2				
18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22161		19. Security Class (This Report) UNCLASSIFIED		21. No. of Pages 55
		20. Security Class (This Page) UNCLASSIFIED		22. Price

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CHINA REPORT

AGRICULTURE

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I. GENERAL INFORMATION

NATURAL CONDITIONS FOR LIVESTOCK INDUSTRY DISCUSSED

Beijing DILI ZHISHI [GEOGRAPHICAL KNOWLEDGE] in Chinese No 5, May 79 pp 1-2

[Article by Shen Changjian [3088 7022 3068] and Dong Wenlang [5516 2429 2597]:
"Talk on the Natural Conditions for China's Livestock Industry"]

[Excerpts] Our national livestock industry currently has two principal sources of animal feed: one is the wild pasturage grasses provided by natural grasslands, and the other is the special purpose superior forage grasses and feeds as well as large amounts of agricultural byproducts that derive from cultivation of the soil. The land area devoted to production of animal feeds is not great relative to the size of our country, and actually there has been no establishment of a large area for the sole purpose of producing animal feeds; thus development of a livestock industry is greatly limited.

Natural grasslands in our country including those in the three provinces of the northeast, Inner Mongolia, Ningxia, Gansu, Xinjiang, Qinghai, Sichuan and Xizang, where the principal livestock areas are located, encompass an area totaling about 53.4 billion mu, or 37 percent of the total land area of the country, or 56 percent of the total land area of the 10 provinces concerned. Additionally, an area of grassy mountains and slopes are distributed in the mountainous and hilly regions of our country's semi-tropical and tropical southland, which are also an integral part of our national natural grassland resources and which are still not fully used. The influence of latitude, elevation above sea level and the monsoons cause obvious differences in the moisture and heat conditions of various parts of our country, resulting in the formation of complex and varied natural grasslands. Grasslands between the northeast and the southwest arranged according to their flatness may be generally divided into the marshy grasslands of forested plains, dry prairies, desert plains, deserts turned into grassy plains, deserts, high and cold grassy marshlands, high and cold barren deserts, as well as the mountain grasslands, mountain prairies and mountain deserts distributed throughout various mountain masses. The vegetation of these different natural grasslands not only manifests their different individual attributes but at the same time

Credits Not Spent for Their Purposes

I was about to say all finances. Here I will elaborate on something to make the point clear. I was about to say that not all of the credits which the plan set aside for reorganization and qualifications were used for that purpose, and the public sector has been put in a difficult position. Where did this money go? It was used for opening new projects by Planning and Finance. How did that happen? We allocated a million pounds for the Rakta plant for modernization, and this sum was used in new expansion.

The rule in investment is not to spend but to define the nature of the spending for a certain property, a certain commodity, or a certain service which is aimed at a specific productive ability. The only apparatus which knows all of this is the planning apparatus, but it is removed from this picture by bureaucracy or by the apparatus in charge of the various sectors, such as industry, agriculture or others.

In short, the priorities are clear to all of us, but we must become absorbed in them, since priorities represent problems, problems have solutions, and solutions can be applied. However, the apparatus has been unwilling or unable to apply these solutions, and the problem of development has become the "handcuffs" which we wear when we say that a quarter of the national income will be allocated for investment, which is indeed almost correct.

[Question] When you invest 25 percent of the national income--and this is a huge sum--the question which comes to mind is: How does the present generation survive with this huge burden? To explain further, we take a quarter of our income for future generations and direct another quarter toward military efforts. What is left?

Are not we, the present generation, bearing all of the enormous needs for development until the year 2,000?

Where Is the Money Coming From, and Where Is It Going?

[Answer] Our real reserves are known, for we want them to be sufficient for stock certificates and for providing the mail and pension funds. These types of reserves represent real, limited and known types. I want to say that our ability to invest must not encroach upon that. What is happening?

These reserves are directed in one amount to the Ministry of Finance. Taxes, customs duties and Suez Canal fees are also sent to it. This income is paid out from there for support, investment, and for our foreign commitments, that is, installments on debts and interest. In my opinion, there is not enough coordination or organization for the income operation, and its investment uses must not exceed true reserves.

reflects different productive capacity, with marshy plains generally producing the highest amounts of grass, such as between 80 and 150 kilograms per mu (dry weight), while barren desert plains yield 50 kilograms or less.

Inasmuch as natural grasslands are subject to the conditioning of a series of non-biological factors and biological factors, they are strongly controlled by natural forces, so there is a limit to what man's intervention, remoulding, and control can accomplish. Consequently there exist in the natural grasslands of our country various factors disadvantageous to development of the livestock industry as follows: 1) imbalances in productive capacity and quality from one region to another and from one season to another; and 2) imbalances in capacity to sustain livestock from one region to another and from one season to another. These difficulties in establishing and maintaining a stable livestock industry are not easily overcome and are reflected in fluctuations in the quantity and quality of livestock. They also give rise to frequent losses in the livestock industry and are the direct cause for the long-standing situation in livestock raising of "alive in summer, fat in autumn, scrawny in winter, and dead in spring." Only through increased building of the livestock industry, production of more feed and forage and an intensified intervention by man can these conflicts be effectively overcome.

In addition, in the warm, arid and semi-arid semi-agricultural and agricultural regions, and in the newly formed loesslands of our country, the soil in many places is powdery. Irrational cultivation and farming methods, and improper development of the land and over-grazing with destruction of the natural vegetation over wide areas has brought about a retreat in the grasslands and the formation of powdery soil, with serious consequences for all kinds of production. This must be viewed seriously.

Living organisms that exist under natural conditions, such as wild animals (particularly rodents), insects (particularly parasites), and micro-organisms (particularly pathogenes), are also factors that bear importantly on livestock production. Among these are communities of species that do damage to living creatures, and must are a direct threat to the life, growth, and reproduction of livestock. They are the cause of outbreaks of contagious diseases and parasitic infestations in livestock. Rodents not only transmit diseases, and endanger both men and animals, but also destroy animal life in the natural grasslands. They have caused rather serious harm to the dry grassland regions and to the high and cold wet grasslands and high and cold prairies of our country.

To summarize the above, the complex yet rational natural environment, the copious natural grassland resources, and the animal feed resources of farming areas provide a material foundation for development in our country of a livestock industry of many varieties of livestock, of many types and of many sectors. In the long historical process of development of the livestock industry in our country, various types of livestock industry have

already come into being, and many varieties of livestock products (meat, milk, hides, wool, and eggs) have been produced. Of course, disadvantageous natural conditions have also played a contrary role in the development of the livestock industry. Therefore, greater development of the livestock industry will require full play of the above-stated beneficial factors to overcome the effects of the disadvantageous factors, the use of modern technological methods and facilities to equip the livestock industry, enhanced regulation and control of natural capacity, reduced dependence on nature, and an acceleration in the development of our country's socialist modernization of the livestock industry.

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MORE DISCUSSIONS ON CHANGJIANG WATER DIVERSION PROJECT PUBLISHED

Beijing GUANGMING RIBAO in Chinese 1 Aug 79 p 4

[Text] Since various articles concerning the Changjiang water diversion project were published in this paper on 16 August last year, we received many letters expressing pros and cons about whether Changjiang water diversion is absolutely necessary, and published here two articles entitled "A Few Opinions and Viewpoints About Changjiang Water Diversion Project" and "We Must Steadfastly Uphold the Guideline of Overall Treatment," so that we may continue to unfold discussions.

A flood control project is necessarily a personal matter. A great water project such as this one which can affect the fortunes of generations to come, must be studied and restudied in minute detail and various plans concerning the project must be compared and discussed again and again. All rational suggestions must be heard and all necessary scientific experiments, carried out. The actual work may be started only after a stable and reliable construction plan has been drafted. It will be extremely dangerous to make haste.--Editor's note

"Is It Absolutely Necessary to Divert Changjiang Water"

(1) Many comrades wrote to say that it is not necessary to use the method of diverting Changjiang water in order to solve the drought problem of Huabei. Others feel that the project of diverting Changjiang water is so great in scale that an enormous amount of national wealth must be spent, and yet it is unclear as to how much people will be benefitted by it. This nation is still in poverty today, and our limited financial power and material power should be spent on more mundane matters. Whether diverting Changjiang water is an absolute necessity should be studied further. Many experts, professors and scientific workers consider that:

First of all, Huabei does not need water diverted from the south. Qinghua University Professor Huangwanli [7806 8001 6849], the National Geological Bureau Engineers Dai Guangxiu [2071 1684 4423] and Mao Tongxia [3029 0681 1115] consider that there is no shortage of water in Huang-Huai-Hai plain (Huanghe-Huaihe-Haihe River basins). There is still potential of getting water from wells there. Professor Huang Wanli considers that there are relatively rich water resources in the Haile River basin. We only need to adopt underground reservoirs and take measures to reduce surface evaporation as much as possible in order to expand water capacity to more than 20 billion cubic meters a year. The water problem along the river basin can thus be fundamentally solved if we also utilize water scientifically. Engineers Dai Guangxiu and Mao Tongxia consider that the Huang-Huai-Hai plain has, in addition to 30 billion cubic meters of fresh water which has already been developed, more than 20 billion cubic meters of underground fresh water and more than 90 billion cubic meters of salt water that can be used for irrigation purposes; so that the area has a potential for further development. Wuhan Hydraulic Electric Power Institute Professor Xu Zhifang [6079 3057 0857] and WangWenxiu [3769 2429 0208] pointed out that one of the main causes of water shortage in many areas of this country is wastefulness. Because of the poor quality of construction work and lack of coordination, the utilization factor of the irrigation water is only between 0.3 and 0.4 (namely, more than 60 percent of the water in an irrigation district has not been effectively utilized; more than half of the water in the reservoir cannot be utilized either). Loss of water during transportation through canals, ditches and culverts occupies nearly one-half of the total amount of water drawn. Adding onto this the loss due to careless handling of water, the water that is actually used to irrigate the field amounts to less than one-half. Huabei plain is no exception when it comes to the wastefulness of water. We only need to overcome these wasteful phenomena, strictly implement water usage according to the plan and popularize the advanced irrigation techniques in order to double the utilization factor. If we still feel a water shortage after this, it will not be too late then to consider various plans for diverting water from other rivers.

Secondly, many comrades consider that if it is really necessary to divert water in order to solve the drought problem of Huabei, it is more economical to divert Huanghe water, because of its proximity. Comrades of the Huanghe Commission and the Shangdong Huanghe River Bureau consider that, over the past 10 years, more than 30 billion cubic meters of water could be diverted from Huanghe each year. There is basically sufficient water, and the project would cost much less than diverting Changjiang water.

Thirdly, exactly how much excess water may be diverted from Changjiang has never been clearly established; and thus there is lack of scientific ground to support the Changjiang water diversion project. Some comrades from Changjiang Office and the Geology Department of Shanghai Teachers College pointed out that over the past 20 years Changjiang water has on average diminished more than 100 billion cubic meters every year. One of

the most important causes for this drop is the fact that there are more and more areas including Jiangnan plain, Tongting lake shores and the lower course of the Changjiang drawing water from the Changjiang for irrigation purposes. Even the Taihu basin, which used to be plagued by flood, is drawing water from the Changjiang to supplement local shortage. According to the project, 15 billion cubic meters of water are to be diverted from the Changjiang each year, which is just as difficult to do as one poor man borrowing from another. The problem is that the Changjiang does not have water to spare. The reasons are: (1) The demand for water within the Changjiang River basin is growing each year. For example, there are 50 million mu of fields for drought tolerant crops being transformed into rice fields in Suchuan, and from 80 to 100 million mu of "look-up-to-heaven fields" that are in need of irrigation. (2) Water for human consumption and industrial applications in the lower course of the Changjiang must be guaranteed. Due to a reduced volume of discharge into the ocean from the Changjiang in recent years, the back flow of sea water up the river is causing serious problems. The back flow has reached the neighborhood of the Changshu Wanglu River in Jiangsu, some 200 kilometers upstream. Several months each year, the Changjiang water becomes salty at Shanghai; a fact that seriously affects the industrial and agricultural production of the area. (3) The Changjiang must also maintain adequate water level for navigation purposes. Therefore, exactly how much water may be diverted from the Changjiang today, and how much 10 years from now, are all unknown. Any plan that is made under such circumstances is bound to be unreliable.

Fourthly, the key question of whether the soil can be prevented from becoming saline-alkaline has never been satisfactorily answered. Director Xiong Yi of the Nanjing Pedology Institute, CAS, and Engineer Chang Jianhao [1603 7003 6275] of the Changjiang Office and others suggested that any plan to divert Changjiang water for the purpose of alleviating the drought and saline-alkaline problems must be done according to the guideline of an overall treatment. That kind of viewpoint which considers that the problem of salt and alkali removal from an alkaline soil has been solved when salt is successfully removed from a small area by draining water is wrong. How to prevent formation of secondary saline-alkaline soil over a region covering a large area remains an important topic that requires continued research.

Fifthly, the plan for diverting Changjiang water has not solved the problem of coordination. Vice President Xie Jiaze [6200 1367 3419] of the Water Conservancy Society pointed out: "The east line of the plan is not well coordinated. For that matter, the overall plan of Changjiang water diversion is not well coordinated. There does not exist a general plan encompassing the three lines--west, middle and east. How these waterways may be interconnected, coordinated or combined is not clear in the first place. Secondly, the plan includes only the construction project of the water course and lacks a construction plan at the irrigation end. As such, it is impossible to answer some of the key questions

such as how to treat the problem of secondary saline-alkaline soil, on which the success or failure of this water project hangs, and the problem of economic return which would ultimately determine whether or not the project is worthwhile carrying out. Thirdly, some of the important scientific and technological aspects of diverting water have not been thoroughly studied, such as evaluation of the water resources of the four river basins including Changjiang, Huaihe, Huanghe and Haihe, and matters related to the overall utilization and unified assignment of these water resources, matters related to an overall treatment of drought/flood and saline/alkaline problems of Huabei plain, combined control and utilization of the three waters (rain, aboveground and underground) and other questions related to water reservoirs, and, finally, the influence and effect on the land brought about by water diversion cannot be clearly understood.

(II) Another group of comrades wrote and suggested that the drought condition at the Huang-Huai-Hai plain has already directly affected the local industry and agricultural production, and it will affect the progress of the four modernizations construction programs. Therefore, diversion of Changjiang water must be carried out. Comrade Zhang Youshi [1728 2589 1395] of the General Office, CAS, presented an argument concerning whether or not the Huang-Huai-Hai plain is in need of water from outside. He cited the historical data over 480 years from 1470 to 1949 and said that on average there appeared a severe drought every 5 years or so in the Huabei and Huang-Huai areas. After the area was liberated, there have been many drought disasters, and each drought critically affected the industrial and agricultural developments of these areas. He made an estimation of the water requirement of the areas in the year 2000 based on the trend of our national industrial and agricultural growth and came up with a figure of 130 billion cubic meters, including water for irrigation of the fields, water for industrial application and water for urban consumption. The total amount of water that can be obtained from the Huang-Huai-Hai plain itself, after all water resources have been fully exploited, was estimated to be approximately 80 billion cubic meters (including 55 billion cubic meters of surface water and 25 billion cubic meters of underground water) with an estimated shortage of 50 billion cubic meters. The Haihe plain north of Huanghe experiences a shortage of approximately 11 billion cubic meters of water in an ordinary year, and in a year of medium drought, approximately 17 billion cubic meters of water. How can we solve such a critical water shortage problem? Comrade Zhang Youshi expressed in his letter that he considered diverting Changjiang water to be the only feasible solution.

(III) Many other comrades pointed out that the data concerning water resources cited in various articles related to the Changjiang water diversion were often quite inaccurate. Argument and plan based on such inaccurate data are highly unreliable. Therefore, they proposed that we must organize forces immediately and carry out a general census of the water

resources of the entire country, and establish clearly the number, quality and distribution of the water resources. Only after this work has been completed can we discuss intelligently whether it is necessary to divert Changjiang water or to discuss how to do it. Many other comrades further suggested that:

(1) A unified planning organization be established: The State Council should establish a Changjiang Water Diversion Planning Leading Committee with various offices underneath to carry out a unified planning and unified control. Only by doing so are we able to take an overall approach to the problem and universally consider all different characteristics of the east, middle and west lines, the balance of distribution of water among various river basins including Jiang, Huai, Huang and Hai, combined utilization of the aboveground and underground water, divide the agricultural districts and the corresponding industrial districts.

(2) The project be carried out according to the economic law: We must modify various old ways of doing water project construction which violated the basic economic law, such as use of capital without compensation, mobilization of labor at unequal pay and not being accountable for economic responsibilities. A water conservation law must be established. The law must state clearly that every water conservancy construction design must include economic study of various proposed plans. Proposed plans must indicate how water tax is to be levied and the loan repaid. No plan shall be approved without this information.

(3) The project must be coordinated: One of the problems of water conservancy projects of this country in the past is the lack of coordination. There have been too many "half" and "lighthearted" construction projects. There are a large number of old engineering projects which have not yet been coordinated, and some uncoordinated new constructions added onto the old ones. This way, the benefit of the construction project cannot be fully developed and a great waste will always result.

"A Few Opinions and Viewpoints About Changjiang Water Diversion," Agricultural Economy Institute, Chinese Academy of Social Sciences

The Changjiang water diversion project involves 1 billion mu of cultivated land and 600 million people of the four great drainage basins of the Jiang (Changjiang), Huang (Huanghe), Huai (Huaihe) and Hai (Haihe), with huge capital investment and gigantic and complex engineering work. It is a great socialist construction project to modify nature. A "Symposium on Changjiang Water Division" was held from the end of March to the beginning of April this year in Tianjin under the auspices of the Chinese Society of Water Conservancy. Enthusiastic discussions on the subject of Changjiang water diversion were carried out at the symposium. We would like to add a few of our opinions and viewpoints about the Changjiang water diversion project.

(I) The Changjiang water diversion project should not be hastily planned. Not only because the project involves such a huge capital investment which this country cannot afford today, but more importantly because we have not done an extensive study of the problem and thus lack the sufficient scientific data today, so that we should not blindly plunge into a project so huge in scope. The opinions of the academic field on this subject are quite diverse today. The differences in opinions are centered around the following three important problems:

(1) The problem concerning water resources and diversion of water--In the northern regions of this country, the temporal and spatial distributions of precipitation are highly irregular and nonhomogeneous. In the wet season, sudden rains often cause flooding, while most of the time the area is dry and short of water, and the demand on water made by industry and agriculture cannot be satisfied. This is an objective fact of the situation of that area. However, there are different viewpoints as to whether it is absolutely necessary to divert water from the Changjiang. One school of opinion considers that the total water resources of the area is insufficient for its own need, and diverting Changjiang water northward is the only way the water shortage of the north can be solved. There are also a smaller number of people who consider that if we utilize the advanced irrigation methods (such as spray and drip irrigation and recycling of the industrial waste water) and rationally utilize the rain water, surface water and underground water, the demand on water in Huabei can be satisfied locally and there is no need to borrow water from elsewhere; at least there is no need to borrow Changjiang water for the next 20-30 years. Different conclusions are arrived at by different investigators due to lack of basic data and insufficient analytical calculations. The data on the underground water reserve and its exploitation are especially incomplete, the estimated values are often different by several fold. At the same time, calculations of water consumed by agriculture, industry and humans are also widely varied. Even among those who are pros on the project there is no agreement as to how much water must be diverted. Take the east line for example: Is 1,000 units of flow rate adequate, or 1,300 units? As to whether 15 billion cubic meters of water diverted from the Changjiang can be guaranteed to pass through Huanghe, viewpoints are varied and no reliable reply can be made. In summary, if the water account is unclear, the plan would be without its most basic proof.

(2) About the water route: There are three major proposed routes today; namely, east line, middle line and west line. Some preliminary works have been done on all three proposed waterways, but most work was done on the east line which included an on-site survey. The west line is to divert water from the upper course of the Changjiang to Huanghe in order to provide water to the northwest region where the water shortage is most critical. This is a strategic measure for the development and construction of the northwest region. Although its construction project is huge and difficult and we are unable to carry it out today, we must organize sufficient forces to undertake the research work and should never allow the west line project to be postponed indefinitely. Most disputes are centered around the middle and east lines. Many people think that the

middle line and east line each has its own area to supply water and each has its own characteristics, advantages and disadvantages. For example, the east line which starts at Yangzhou and reaches Tianjin can utilize the old canal route and so the construction project will be easier. However, the electric bill amounting to 100 million yuan each year must be spent in lifting water through steps; consequently, the water bill will be high. The middle line which draws water from the Danjiang reservoir, routes through Henan and the eastern slopes of the Taixing mountain and delivers it to Beijing or further to Qinhuangdao can flow naturally. However, it has to wait until the water level of the Danjiang reservoir has been raised and the Sanxia construction project has been finished. A long wait is expected. Putting aside the advantages and disadvantages for a moment, the plan on neither line has given a concrete answer to some of the important questions that are highly likely to crop up; neither plan has given proof of the economic benefit of the project. Since very little work has been done on the middle line, it is too early to compare the overall economic merits of the middle and east lines, nor can we say which line is better or which line should be built first.

(3) Problems related to the impact of diverting water: The average volume of Changjiang water is 930 billion cubic meters a year, while the total volume of the three rivers--Huang, Huai and Hai--put together amounts to only 110 billion cubic meters; a ratio of 9 to 1. The cultivated land area along the course of the Changjiang is approximately 40 percent or so of the combined total cultivated land area along the four river basins, and the available water there occupies 90 percent of the total. There is no doubt whatsoever that Changjiang is rich in water. However, the Changjiang River basin is also the economic, industrial and agricultural development center of this country. How much water can it spare after all? What will happen to the Changjiang after its water is diverted? What other problems may crop up as a result of diverting water? For example, will tens of millions of mu of cultivated land of Huabei become saline-alkaline? The north does not need water from the south during its wet season and in winter. Not only that, they have difficulty with drainage during the flood season. Then where do you store the water which is diverted continuously all year round? Important questions such as these have not been answered yet. As to the biological equilibrium, northward migration of local diseases and water pollution, the impact on harbors, waterways and the marine creatures (for example, fish production in the lakes of Jiangsu may be reduced by 10 million jins a year), and so on, all these problems except a few specific questions have not been scientific replies.

Summarizing what has been said above, we think that there is lack of unified understanding of the problem in the academic field. Before all these important questions are scientifically answered, we should refrain from hastily plunging into the Changjiang water diversion project, lest we should repeat the mistakes made in the Sanmenxia project, wasting labor as well as money, gaining little with great effort, or worse, turning benefit into disaster and bringing more hardship to the people.

(II) Establish a unified leading organization to unfold scientific research related to the Changjiang water diversion project: This was the unanimous opinion of all who attended the symposium held in Tianjin. We hold that this opinion is correct. This water project is a great project which transcends river basins, departments and sciences; it cannot be accomplished by the Department of Water Conservancy alone. It can only be carried out under a unified leadership of a powerful unified leading organization, by effectively mobilizing various departments and various scientific fields for a coordinated battle. At the same time, the water resources of the four great river basins--Jiang, Huang, Huai and Hai--are being studied, scientific research related to economics, management and social science of the project must be broadly unfolded and experiment with models carried out. Only by doing so can we supply reliable scientific data for planning and building the construction project upon a foundation which is in tune with the natural and economic laws. Therefore, it is of utmost importance to establish a unified leading organization, to appropriate a sufficient amount of funds, material power and manpower to unfold scientific research.

(III) Agriculture must be the foundation of the water project and the idea of "emphasizing the skeleton but slighting the accessories" must be completely reformed: Listing only the capital investment of 4 billion yuan on the skeleton construction of the east line and not listing any investment needed for the associated construction works in the fields is precisely the reflection of the idea of "emphasizing the skeleton but slighting the accessories." Over the past several decades, there have been many examples of "emphasizing the skeleton but slighting the accessories" and many "half" and "lighthearted" construction projects. The wastefulness of such construction projects is frightening! We must never allow this water project to fall into the same old trap. If a water project which is intended to serve agriculture directly is not planned to achieve increased grain production as its ultimate goal, but stops short at finishing the great construction work, the skeleton work, such act would constitute an extremely irresponsible act toward the people. Suppose that the central government has appropriated 4 billion yuan for the construction of the east line, there are two possible outcomes: (1) more and more money will be spent on it in order to make it work, becoming wasteful and passive; (2) the irrigation ditches will not be ready yet when water arrives, creating a great waste or a great disaster.

According to a calculation made by some water conservancy workers, to really benefit the 6.4 million mu of land (this is the area supposed to benefit from the east line), at least 2 to 3 times the 4 billion yuan capital investment must be made. To be sure, the accessory construction works in the fields should not be supported completely by the central government; however, under the present circumstances when the collectives are poor and farmers are badly in need of relief, the local government

and farmers themselves are truly unable to bear the burden of the construction cost in the fields. It can only be done either by the central government alone and the capital recovered through levying a water tax. In summary, the plan must include the capital investment for all the associated construction works that are required in the fields. A plan for various irrigation districts must be included in the master plan as a major component together with a plan for improvement and prevention of secondary saline-alkaline soil. Diverting Changjiang water is an all-around business; it should not be treated as a simple engineering technical problem only.

(IV) The water project must aim to achieve the best all-around economic effect; it must aim to match the prospect of industrial and agricultural development in the year 2000: Implementation of the Changjiang water diversion project would no doubt be the greatest socialist construction project no equal of which has ever been seen before. It will affect not only the natural environment of the area but also the socio-economic conditions very significantly. In the Tianjin symposium, more attention was paid to the former and little to the latter. When the project is started, it will involve not only a large sum of money and huge amount of material power, but must also involve a large labor force including scientific and technical personnel and management talents, which involves the educational problem. The construction project would most certainly introduce changes in patterns of industry and agriculture together with transportation and commerce. There must exist a certain objective law among all these. The construction project will further involve directly the social problems such as land and relocating people. Therefore, economists and sociologists must actively participate in the planning of the project. Only by doing so can we build the project on a relatively sound foundation which is adequate in every respect. At the same time, we feel that there should not be just one plan; several plans should be drafted so that comparison of overall economic merits may be made. Furthermore, we must make all information public, including advantages and disadvantages, gains and losses, in order to mobilize public opinion and to mobilize the talents of the society so that the work may be done even better.

"We Must Steadfastly Uphold the Guideline of Overall Treatment"--A talk on Changjiang water diversion and preventing the soil of Huang-Huai-Hai plain from becoming saline-alkaline--by Xiong Yi [3574 3015]

Diverting Changjiang water northward is one of the greatest socialist construction projects of this nation; it is an original undertaking which will modify nature. The main objective of this project is to serve the agricultural production of the Huang-Huai-Hai plain by solving the drought problem of the area. However, the problems of drought, flood and alkaline soil of the northern district are all related. Therefore, the Changjiang water project must be planned with the overall treatment of the problems of the Huang-Huai-Hai plain as an integral part of the project. If the natural law is defied by ignoring this point, the Huang-Huai-Hai plain

would certainly invite the merciless wrath of nature and a great disaster would certainly result, just as what came to pass in the 50's when the Huanghe water was diverted for irrigation purposes.

The Huang-Huai-Hai plain is an independent biosystem. What would happen after a large volume of water is imported into this region from the south? Would it bring a significant change in the biosystem of the plain? Would it turn the soil into saline-alkaline soil or into a bog? These are some of the concerns expressed by the vast majority of the cadres.

Historically, the Huang-Huai-Hai plain has experienced numerous disasters related to drought, flood, alkali and salt. These disasters are all innate to the area; they coexist, interact with one another, compounding the damage. Therefore, an overall treatment of the problems is absolutely necessary. This is a concept gradually formulated based on the repeated experiences over a long period of time. Without an overall treatment, a piecemeal approach to the problems--treating head for headache and leg for legache--will never solve the entire problem of the Huang-Huai-Hai plain.

Before the area was liberated, the natural disaster of the Huabei plain used to be very severe and the biosystem was constantly subjected to the oppression and damage wrought by drought, flood and salt. In the early days after liberation, we built Jinmen canal irrigation district over the Yongding River and Shiyuesi irrigation district over the Nanyun River in order to overcome the drought condition of the area. These projects ended in failure only because we paid attention to irrigation but neglected drainage. Toward the end of the 50's, failing to learn from past experiences, the three provinces of Hebei, Shangdong and Henan built dams to raise the water level and carried out large-scale development of the Huanghe irrigation project in order to alleviate the drought condition of the area north of Huanghe. In the plains they built plain reservoirs and steps which intercepted the natural drainage waterways. They took care of storage and disregarded the drainage. The irrigation canals criss-crossed the land and dams were built everywhere to store water. This upset the natural drainage system and destroyed the natural flow of drain water. As a result, the underground water level rose, and the secondary saline-alkaline soil and bog soil spread out rapidly, with a consequent decrease in the grain production and increase in hardship for the people. Later, it was necessary to demolish the dam which blocked Huanghe, stop building new irrigation canals, dismantle constructions blocking the natural flow of water and flatten the irrigation canals. We must take heed of this painful lesson.

In recent years, development of saline-alkaline soil in the Huabei plain is not so critical. However, this does not mean that the field drainage construction of this area has been completed, rather, it was the result of a relatively dry spell it has had over the past several years which encouraged people to adopt irrigation well and drainage well, plus the fact that the Haihe treatment project is taking effect. There are now

more drainage routes which discharge into Haihe and thus lighten the threat of saline-alkaline soil formation. Why does well irrigation not cause formation of saline-alkaline soil while canal irrigation does? The reason is as follows: When water is drawn from underground, the salt is filtered out and the underground water level is lowered at the same time. On the other hand, canal irrigation brings water in from outside and if there is no adequate drainage system the underground water level will rise and thus promote formation of saline-alkaline soil. Therefore, any irrigation work must be accompanied by drainage work; or irrigation should not be contemplated at all. The drainage system in the field of the Huang-Huai-Hai plain today is not much better than it used to be. Therefore, if so much more water is brought in from the south as planned, can the Huabei plain "digest" it? The soil turned saline-alkaline in the past when we drew water from the Huanghe, would it make any difference now that we draw water from the south using electric power? If it could bring saline-alkaline soil, what should we do? Answers to these questions must be carefully considered as part of the planning. We must keep our head clear: the waters of the Huanghe and Changjiang are both fresh water; therefore the cause of saline-alkaline soil does not lie in the water itself but in the drainage and how well the water is managed. Therefore, no matter where the water comes from or by what route we must make sure that irrigation is always accompanied by adequate drainage. An all-around measure for the prevention of drought, flood, salt and alkali must take into account the following problems: (1) Treat according to the need of each area: Different parts of the Huang-Huai-Hai plain have different climates, terrains, hydrological conditions, soils and crops. Therefore, different treatment methods must be established according to the need of each individual area and then applied accordingly. The designers of this water project must also be aware of the biosystem. They must weigh the impact such a project would make on the biosystem; whether it will be good or bad. Therefore this Changjiang water diversion project should not be a simple water conservancy construction project. It must also include the drainage construction project and furthermore division of irrigation districts and measures for prevention of saline-alkaline soil. (2) Changjiang water diversion must be based on the drainage project: Irrigation should not be contemplated where there is no adequate drainage. Trunk drainage waterways must be increased in number to match the irrigation system. In laying out the trunk waterways and transporting ditches, the water level is desirably below the ground surface in order to match the irrigation system. In laying out the trunk waterways and transporting ditches, the water level is desirably below the ground surface in order to lessen the chance of forming saline-alkaline soil. (3) Proper water storage: Building plain reservoirs in the northern district is undesirable because loss resulting from seepage is great. The ideal storage place is the underground reservoir or funnel where the water table is low. Before the storage problem is completely solved, water should not be brought into the area. (4) Establish standard irrigation district with a good drainage system. Before

water is brought in from the south, the local precipitation, surface water, soil water and underground water must be managed carefully. After the water is brought in, the existing wells should not be abandoned. Irrigation wells and ditches must be both maintained and combined. An excellent system which maintains the balance of salt, a system so hard to come by, such as the well irrigation and well drainage system, should not be thrown away without thinking.

Irrigation must be carried out rationally, never wasting water. Establishment of a standard irrigation district is the key to success of the irrigation business. The irrigation district must coordinate irrigation and drainage. There must be a strict control over water usage and management. Conscientious personnel are needed to manage water usage. Irrigating the land without turning it alkaline is the true measure of success of this water project. This nation is in need of a water conservation law. Anybody who does not work scientifically, who neglects his work in managing water properly should receive deserved punishment.

Modernizing agriculture is a great and difficult task. Diverting Changjiang water is an important construction project which can generate favorable conditions for the modernization of agriculture. Needless to say, the water diverted from the south will also be used in industrial applications and consumed by people, but its main objective is for the service of agriculture. That is why we must not only consider whether we can bring water up north or which route to use or how to build it, but must also consider how to use water scientifically and how to prevent saline-alkaline soil from being formed. If these problems are not carefully considered, the water diverted from the south may fail to benefit the people of the north but also bring water damage. We must recognize that there are still many irrational phenomena existing inside our irrigation system today, such as a mismatch between the irrigation system and the drainage system, irrigation and drainage using the same ditch, blocked drainage ditch without repair, natural drainage waterway being used as water storage for irrigation, unused wells, abandoning well because of ditch, etc. All these factors would adversely affect the overall treatment of the drought, flood, salt and alkali. Agriculture of the Huang-Huai-Hai plain can prosper only if we obey the natural law, do things scientifically, make rational selection of the waterway, adequately solve the drainage and storage problem, practice scientific water usage, and scientific cultivation.

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CSO: 4007

NEED TO STRUGGLE AGAINST FORESTRY DISEASES STRESSED

Beijing GUANGMING RIBAO in Chinese 22 Jul 79 p 1

[Article by Li Jiajie [2621 1367 2638]: "An Appeal To Quickly Take Measures To Protect Forestry Resources"]

[Text] At the academic symposium on forest diseases convened recently by the China Forestry Society, forest pathologists from scientific research institutes, production units and institutions of higher learning throughout the country strongly urged that the government departments concerned should pay great attention to the serious destruction caused by diseases to our forests and proposed that measures should be taken to protect our precious forestry resources.

In compliance with the instructions of Comrade Zhou Enlai before his death, our forest pathologists, following a long period of research, have completed a general survey of the pathogens of forest plants of a specified region or time in various large primeval forests throughout the land, including the Greater and Lesser Xingan Mountains in the north and the Jianfeng Mountain Range on Hainan Island to the south. In so doing, they have acquired an understanding of the occurrence of diseases among the various species of trees in the primeval forests, clarified the mortality of the forests and collected scientific data on the fungi of the primeval forests as well as data on wood rot caused by disease. At the same time, a study was made of pathogenic biology; infectious diseases; and the spread and control of diseases, centering around the major diseases that seriously threaten forestry production. These consist of 64 types of diseases of 38 tree species, including anthracnose of the tea-oil tree, red withering of the Ma-wei pine [*Pinus masoniana* Lamb], and premature needle loss of the deciduous pine. The pathogenesis of many of these forest diseases has been grasped. Control measures mapped out in accordance with the results of this scientific research have been carried out on large tracts of forest centering around the various sectors of forestry production. These measures have begun to show marked results.

Specialists and professors in forest pathology pointed out at the symposium that, notwithstanding the great efforts of scientific workers, due to the fact that the leading cadres of the departments concerned either neglected

to develop forest pathology or did not understand the great significance of this science, the development of forest pathology in our country has been slow and slack and it has not been possible to popularize the results of scientific research in time. Therefore, area in which forest diseases occur nationwide has exceeded the area of afforestation in the same year, and approximately 1,000 types of forest diseases are swallowing up our precious forestry resources daily. Among the timber forests, damping-off of pine and fir seedlings is prevalent in nurseries everywhere causing young plants to wilt and die. Damage is quite severe. These diseases are prominent among pine trees: culster cups, leaf cast and cancer. In recent years, these diseases have developed rapidly and every attack has been specified internationally as a major disease. Among the economic forests, there are numerous diseases of the tea-oil, tung and olive trees. When olive trees were introduced in China, they brought with them warts and peacock spots. Thereafter, several other diseases were successively detected, including bacterial wilt, ulcers, anthracnose, dry rot and root knot. They have caused a marked drop in the output from oil-bearing trees. When attacked by anthracnose, the yield of the tea-oil trees is reduced by 30 percent. In a word, mysterious diseases of trees have already caused heavy losses to the state; but, up to now, the departments concerned have attached no particular attention to this.

Specialists, professors and representatives participating in the symposium forcefully pointed out that the phenomenon of diseases which are damaging our forests can no longer continue: Therefore, they have put forth numerous proposals, some of which for the creation of a special forest pathology section under the Forest Protection Special Committee of the China Forestry Society to strengthen leadership in forest pathological research; the establishment of a forest protection research institute under the Chinese Academy of Forestry Sciences to serve as a national forest protection research center and of corresponding research laboratories in the various provincial forestry institutes; the restoration of the original North China and South China quarantine stations under the leadership of the Forestry Ministry and the immediate implementation of domestic and international forest disease quarantine work, such as conducting a general survey of forest diseases, determining the quarantine districts, ascertaining targets, and establishing a sound quarantine procedure and system. Also the Forestry Ministry must strengthen its leadership, organize coordination and cooperation, and as quickly as possible end the existing phenomenon of the dispersal of strength and duplication in research work.

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CSO: 4007

INCREASED SUMMER CROP HARVEST REPORTED

Hong Kong CHING-CHI TAO-PAO in Chinese No 30, 1 Aug 79 p 4

[Article by Xin Hua [6580 5478]: "Successes in Agricultural Production Reported"]

[Excerpts] In comparison with last year's bumper crop, another good harvest has been brought in from the 35 million hectares of summer food and oil-bearing crops all over the country, thanks to meticulous management and successive victories over such adverse factors as drought and "reverse cold spring weather." There was an increase in summer grain production, while the yield of rapeseed rose by 10 percent.

One of the outstanding features of this year's summer grain crops is that the majority of provinces in the principal producing areas registered a production increase. Take, for example, Shandong and Sichuan, which have larger areas of summer grain crops than the other provinces, municipalities and autonomous regions. They set new records in both gross harvest and unit yield of summer grains. Of the two, Sichuan Province increased production by 7.5 percent over last year's bumper harvest. In Jiangsu, Zhejiang, Anhui, Hubei, Shaanxi and Shanxi provinces, the total output of summer grains increased by about 10 percent.

The rich harvest has chronicled the achievements of the broad masses of cadres and people brought about by their hard struggles under difficult conditions. During the planting season last year, most areas continued to be affected by a prolonged drought. Throughout the land, about 6.6 million hectares were seeded after drought-resistant measures were taken. In the principal wheat producing areas in the north, the total winter irrigation area last year was 5.3 million hectares, an increase of more than 1.3 million hectares over the previous year. After the coming of spring, abnormal weather set across the country. Severe "reverse cold spring weather" appeared in many places and particularly in the northern regions, where between mid-April and mid-May the air temperature was clearly on the low side and there was much rain and little sunshine. These conditions had a harmful effect on the growth of wheat. In the light of the special characteristics of wheat seedlings, cadres and the masses of people everywhere adapted their working methods to the conditions of the seedlings; strengthened field management;

and adopted timely measures, such as foliage fertilization, disease and insect pest control, irrigation at wheat yellowing stage, and protection against dry hot wind. Thus, they alleviated difficulties and reduced the losses of summer grain crops brought on by natural calamities, making it possible for the nationwide production of summer grains to exceed even the record harvest of the previous year.

Such enthusiasm on the part of the masses of peasants has stemmed from the fact that the party's economic policy in the rural areas is consistent and realistic. Last year it was also due to this fact that a bumper harvest was achieved throughout the country. Grain production increased by 2.2 million tons and the income received by the peasants as their allotment from the collective rose by 13.7 percent over the year before.

Through reaping a good summer grain crop, the initiative has been won in achieving a bumper harvest for the entire year. This is because it has been proven by many years of experience that the extent of the increase in summer grain yield is larger by far than that in total grain output for the entire year. For example; the average annual increase in summer grain production during the 7 years between 1872 and 1978 was somewhat over 100 percent more than the increase in total grain output for 1 year during that period. But, last year, the increased production of summer grains constituted 70 percent of the increased grain production for the entire year. At the same time, because this year's abundant production was achieved on the basis of the bumper harvest gathered in the summer of the previous year, the peasants have been jumping for joy. Hereafter, their enthusiasm will be even greater; and this is an essential guarantee that a bumper harvest will be achieved for the entire year.

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CSO: 4007

BRIEFS

NEW DAM BUILDING TECHNIQUES--Taiyuan, October 15 (XINHUA)--A new book on methods employed by the peasants to build dams using hydraulic power is to be published shortly by China's water conservancy and power publishing house. The peasants in Shaanxi and Shanxi provinces developed new techniques while they were engaged in large scale farmland improvement on the loess plateau along the Yellow River basin. Loess soil in the Yellow River basin collapses easily after becoming damp but quickly hardens when dry. The slopes of loess hills are precipitous with deep and narrow cliffs. The local peasants dug pits at a higher level at both ends of the foundations of a dam, pumped water into the pits and let the water through excavated channels to carry soil onto the foundations of the dam. The process of wetting and drying out the loess soil finally produces a solid dam. This technique lowers costs by as much as 60 per cent and is now being used in thirteen provinces and autonomous regions. So far some 8,000 dams have been built in Shaanxi and Shanxi provinces by using the method, and have worked satisfactorily in the rainy season. The Chinese Ministry of Water Conservancy and Power is now carrying out in-depth studies of this dam-building method, including their ability to withstand earthquakes. Standards have also been drawn up for building dams. [Text] [Beijing XINHUA in English 1222 GMT 15 Oct 79 OW]

SOIL TEMPERATURE AGENTS--Beijing, October 9 (XINHUA)--Four agents that maintain soil temperature have been developed in China and they are being popularized. Used as liquid sprays to fix a thin film over fields, surface evaporation is reduced by 50 to 70 per cent and the topsoil temperature is raised two to five degrees centigrade. The agents are useful when early spring temperature is low or there is early autumn frost. Scientists at the Institute of Geography of the Chinese Academy of Sciences and other units developed the agents. The scientists are helping a number of factories to install equipment for making the chemical agents and new factories are being set up. The agents also improve soil texture and activate microbes to increase soil fertility. When the agents are applied to rice seedlings in early spring, sowing can be carried out 10 to 15 days earlier than usual. Cost is only one-fifth that of plastic sheets, which are also used to protect seed beds. Good results are also reported for cotton, sweet potatoes and maize seedlings, as well as vegetables and tree saplings. The agents can be applied with pesticides, weedkillers and chemical fertilizer. This helps increase and prolong effectiveness of the chemicals. A forestry experimental station in Heilongjiang Province brought tree anophomyiidae [spelling as received] flies under control by spraying liquid mixtures of pesticide and agents to conserve soil temperature. [Text] [Beijing XINHUA in English 0717 GMT 9 Oct 79 OW]

IRRIGATED FARMLAND EXPANDED--China now has 700 million mu of farmland under irrigation, nearly three times as much as the 240 million mu in 1949. Half of the 700 million mu is stable high-yield farmland irrespective of drought or flood. [Beijing GUANGMING RIBAO in Chinese 26 Sep 79 p 3]

AGRICULTURAL CADRES TRAINING CLASS--An agricultural cadres training class, sponsored by the Ministry of Agriculture, was officially opened at a ceremony at the Hua Nan [South China] Agricultural College on September 17. The first class has 75 students, who are leading agricultural cadres from various parts of Fujian, Guangxi and Guangdong provinces. The training period of each class is four months. [Guangzhou NANFANG RIBAO in Chinese 23 Sep 79 p 1]

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BRIEFS

WATERLOGGED FARMLAND--Suxian Prefecture has urgently mobilized the cadres and masses to fight floods and crash-rescue late autumn crops. In the prefecture, 2.45 million mu of crops have been affected by the floods. By 23 September, the prefecture had drained 2.27 million mu of waterlogged farmland. Except some marshland and embankments where the conditions for drainage are comparatively poor, the accumulated water in farmland has been basically drained. The prefecture has crash-rescued some 800,000 mu of sweet potatoes and peanuts. Since 12 September, it has rained heavily in the prefecture and the flooding situation is serious. Lingbi County has sent some 160,000 people, used 360 sets of drainage and irrigation machinery, built 3,132 drainage channels and drained the accumulated water on some 730,000 mu. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 25 Sep 79 HK]

COUNTY WHEAT--Lingbi County's wheat production in the past 10 years was comparatively low. After the smashing of the "gang of four", the backward situation in wheat production in the county has rapidly changed. Despite drought in 1978, the people in this county still increased the output of wheat by 45 million jin, insuring the fulfillment of 520 million jin of grain for the whole year. This summer, output increased by 71 million jin over last year. Now, the people have collected 2.25 million cubic meters of indigenous miscellaneous manure, purchased 9,300 tons of phosphatic fertilizer, providing 20 jin for each mu, and purchased 15 jin of nitrogenous fertilizer for each mu. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 19 Sep 79 HK]

SUMMER GRAIN PRODUCTION--Jiashan County, Anhui, produced 130 million jin of summer grain this year, 63.7 percent up from last year's 80 million jin. This year's output of rapeseeds also rose by 150 percent. [Beijing XINHUA Domestic Service in Chinese 1317 GMT 7 Oct 79 OW]

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FUJIAN

BRIEFS

WATER CONSERVANCY AND AFFORESTATION--According to statistics on 18 September, 390,000 people in Putian Prefecture have been mobilized to work on the water conservancy projects and have completed 2.1 million cubic meters of earth and stone work, built 64,000 mu of land for afforestation, prepared 7,500 mu of land for planting tea and fruit trees and cultivated 130,000 mu of young forests. [Fuzhou Fujian Provincial Service in Mandarin 0300 GMT 3 Oct 79 HK]

CSO: 4007

ZHANJIANG PREFECTURE SAID SUITABLE FOR OIL, SUGAR PRODUCTION

Guangzhou NANFANG RIBAO in Chinese 11 Jun 79 p 2

[Article: "Zhanjiang Prefecture Should Become an Oil and Sugar Base for the Entire Province"]

[Text] Zhanjiang Prefecture, located in the semitropics, is the principal region in our province for the production of peanuts and sugarcane. Cultivated land in the entire prefecture amounts to an area of 9.87 million mu of which wet and dry fields account for 6.54 million mu and slopes account for 2.91 million mu. Except for mountainous areas in the north, the rest is hilly or flat land suitable for the development of oil and sugar production. Oil and sugar production has developed fairly rapidly here ever since liberation, and under the direction of the party. Since 1965 the area planted to peanuts annually throughout the region has been between approximately 1.2 million and 1.4 million mu (with a decline to 1.14 million mu in 1977). Yields amount to close to two-fifths of production in the entire province. In 1949 there were only somewhat more than 130,000 mu of sugarcane under cultivation, with production amounting to 1.97 million tons of cane from which 1.20 million tons of sugar was derived. As of last year (the pressing season of 1978), the cultivated area amounted to more than 750,000 mu that produced 1.59 million tons of sugarcane, from which more than 190,000 tons of sugar was derived. Facts show that a bright future exists for the production of oil and sugar in this prefecture.

But during the last 10 years, production of oil and sugar in Zhanjiang Prefecture has clearly retrogressed. As of 1969 total output of peanuts had reached 2.11 million dan, with a steady decline in this figure taking place during the 70's and sales of edible oil to the state steadily decreasing. Sugarcane development was likewise slow. The fundamental reason for this state of affairs was the disruption and damage caused by the extremely left line of Lin Biao and the "gang of four." After the struggle to expose and criticize Lin Biao and the "gang of four," the demarcation lines between right and wrong that they had thrown into confusion were clarified, and with the re-implementation by the state of a policy of special rewards for sales of oil and sugar, the broad masses

of cadres and commune members throughout the prefecture resolved to plant more sugarcane and more peanuts to make a greater contribution to the nation.

The question now is how to further implement the policy of "taking grain as the key link and insuring all-around development, suiting measures to local conditions, and appropriate concentrations," to build Zhanjian Prefecture into the principal oil and sugar base in our province. Not only is there an urgent need to do this in terms of national construction and improvement in the livelihood of the people, but the conditions favor its accomplishment as well, as follows: 1) current per unit of area yields of peanuts and sugarcane continue fairly low. By increasing per unit of area yields, aggregate production can be increased several times over. For example current per mu yields of peanuts amount to about 120 jin. If per mu yields were 200 jin, aggregate yields, when figured on the 1.2 million mu currently used to grow peanuts, would amount to 2.4 million don, producing 6.72 jin of edible oil. In the case of sugarcane, current yields per mu amount to only 2 tons. If this could be increased to 4 tons, sugar production would rise to 380,000 tons. We believe it is entirely possible to achieve these yield figures within several years by measures that assure good harvests despite drought or flood, policy implementation, and proper production measures. 2) In the Leizhou Peninsula and the basin of the Moyang River, approximately more than 1 million mu of barren land exists for reclamation. These lands are suitable for the cultivation of peanuts and sugarcane. Given improvement in water conservancy conditions accompanied by mechanization of agriculture, the entire area could be put to use with fairly optimistic prospects for development. 3) Much hilly land exists in Zhanjiang Prefecture where an expansion of the area exists in Zhanjiang Prefecture where an expansion of the area planted to peanuts and sugarcane could take place with no use of the area where paddy rice is currently under cultivation and without hurting the completion of the state purchase quotas for grain. Considering the current state of affairs in which the country still has less than an ample amount of grain, this provides a fairly attractive alternative.

For these reasons we believe that it is possible to build Zhanjian Prefecture into a production base for peanuts and sugar. All that is needed is formulation of concrete development plans, and adoption of feasible measures, and unremitting efforts to see great results within several years.

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STOPPING FURTHER DAMAGE TO FORESTS URGED

Guangzhou NANFANG RIBAO in Chinese 21 Jul 79 p 1

[Article by commentator: "Halt the Pernicious Trend Toward Destruction of Forest Resources"]

[Excerpts] The Heyuan [3109 3293] County Committee has taken aim at the serious matter of the cutting and denuding of forests by conducting wide publicity among the masses of the "Forestry Law," enforcing the "Forestry Law," taking strong measures against offenders who destroy forests, and by mobilizing the broad masses to protect forest resources. This is entirely necessary for the stabilization of production in mountain regions, the development of production in the forestry industry, and the transformation of the appearance of the mountains. We hope that party and leadership organizations everywhere will, in the interest of the sons and grandsons of future generations, live up to the spirit of the recently convened Forest Regions Work Committee of this province in adopting strong measures to resolutely stop the pernicious trend toward the cutting and denuding of mountain forests.

During the past several months some problems have arisen in the destruction of forest resources to varying degrees in different places. Some state-owned forests have been forcibly occupied, plundered, and denuded, with some medium-size and young trees as well as shelter-forests and highway forests sustaining damage with fairly serious consequences. As a result of work done by leadership departments of the government and the party, many localities have already seen the beginning of a halt to this pernicious tendency. But in other localities promiscuous cutting, denuding, and plundering continue with serious damage being done. A preponderance of facts shows that the crux of whether or not this pernicious tendency can be halted lies in leadership and in whether leadership on every level is able to take a clear-cut stand in enforcing the law and doing things in accordance with the "Forestry Law."

In some counties, communes, and brigades some muddled thinking exists among cadres. They think that punishment according to the law of offenders who

destroy forests is "indiscriminate criticism and struggle," and that to educate the masses not to cut down trees as they please and denude the forests is to show disrespect for the autonomy of production brigades. So it is that they dare not struggle against or otherwise deal with those offenders who destroy the forests, and dare not conduct persuasion and education of the masses who take part in indiscriminate cutting and denuding. Clearly this results from mistaken notions. Enforcement of the "Forestry Law," and the adoption of strong measures against offenders who indiscriminately cut and denude are correct actions in support of the fundamental welfare of the masses and constitute adherence to the law in preserving the forests; they absolutely are not violations of policies or laws or "indiscriminate criticism and struggle" that damage the welfare of the masses.

Cadres in some places sympathize with and connive in the indiscriminate cutting and denuding because of the "hard life of commune members," and imagine that this is a demonstration of concern for the livelihood of the masses.

In some counties, communes, and brigades, cadres have at heart only the welfare of their own brigade, their own commune, or their own county. Every time a dispute arises over mountain rights or forest rights, they do not attempt mediation from the standpoint of the greatest good for the greatest number of people, but instead use fair means or foul to condone or abet communes and brigades to cut down the forests of opponents or to occupy, plunder, and denude state-owned forests. They turn deaf ears and blind eyes to serious incidents involving ganging up on and beating forest wardens. By wallowing in selfish departmentalism, they place party discipline, national laws and the welfare of the people in the back of their minds. This is exceedingly wrong and even very dangerous.

There are some other persons in charge in leadership units of the party and the government who know very well that forest resources have been depleted excessively and are in extreme need of recuperation and rebuilding, but they are fond of "concern for human sensibilities," and irresponsibly criticize regulations, give the green light to "felling trees outside the plan" as they see fit, not caring to help halt the indiscriminate cutting and denuding. If leadership cadres take the lead in breaking the law, how can they lead the masses in enforcing the "Forestry Law"? Naturally they deserve the sharp criticism of the masses.

9432

CSO: 4007

BRIEFS

LATE RICE CROP NEEDS EXTRA CARE--The just-transplanted late rice crop in Guangdong needs timely and extra care this year for the following reasons: (1) The transplanting of the late rice crop was delayed this year because the early rice crop ripened late; (2) Most of the late rice varieties planted this year are the temperature susceptible varieties and many of the seedlings were hit by typhoons; (3) The harvesting and sowing operations this summer were too close to each other, the paddy fields were irrigated for too short a period and, consequently, the rice stalks plowed under were not sufficiently decomposed for the new seedlings. [Guangzhou NANFANG RIBAO in Chinese 17 Aug 79 p 3]

AGROSCIENTISTS RETURN TO AGRICULTURAL POSITIONS--A recent study by the Guangdong Provincial Party Committee showed 2,231 agricultural scientists and technicians were not working on agriculture-related jobs in the province. Of these, 1,621 were transferred to agricultural positions as of the end of last June. [Guangzhou NANFANG RIBAO in Chinese 31 Aug 79 p 3]

MORE CATTLE RAISED IN ZHANJIANG--The number of cattle raised and owned by individual commune members exceeded 30,727 by the end of last June. This is in addition to those raised by collective efforts in the communes. [Guangzhou NANFANG RIBAO in Chinese 11 Aug 79 p 2]

CSO: 4007

SESBANIA PROVEN TO BE EFFECTIVE FERTILIZER

Beijing BEIJING RIBAO in Chinese 11 Jul 79 p 3

[Article by Li Jiyang [2621 4949 2254] and Zhen Baosheng [3914 1405 3932] of the Peking Municipal Bureau of Agriculture and Forestry: "Cultivate More Sesbania To Improve the Soil"]

[Text] Sesbania is a green manure crop that is a highly effective, quick acting and long lasting source of fertilizer. Fresh sesbania contains 0.52 percent nitrogen, 0.07 percent phosphorus, and 0.15 percent potassium. The departments concerned have determined that turning under 2,000 jin of fresh sesbania is equivalent to applying 40 to 50 jin of ammonium sulfate, 5 to 6 jin of calcium superphosphate, and 4 to 5 jin of potash to the soil. Besides, the tender parts of sesbania can be fed to hogs or used as live-stock feed and its stalks can be used in the manufacture of paper.

Sesbania is highly resistant to salt. Normal growth is possible in soil with a salt content of less than 4/10 of one percent. Soil salinity drops markedly in the lots planted to sesbania. The root system of a sesbania plant is relatively well-developed, criss-crossing not only the top but the deep level of the soil as well. After the roots decay, they leave many crevices in the soil, making it easier for the root systems of the aftercrop to expand. That is why sesbania is also a fertilizer good for soil improvement. Since sesbania is tolerant to waterlogging and does not need very fertile soil, it is relatively easy to cultivate. Two thousand jin of sesbania per mu can be harvested even on barren land or in sandy soil.

Following the steady rise in the multiple cropping index of arable land, the contradictions between cultivating the land and letting it lie fallow have become more and more acute in the Beijing suburbs. The cultivation of sesbania on a larger scale can solve these contradictions. In recent years many communes and brigades have adopted this measure and the results have been good. In the city's Chaoyang district, for 5 successive years the experimental station of the Heping Commune has planted sesbania in sandy or alkali soil. Organic matter in the soil has increased more than 10-fold, total soil salinity has decreased over 40 percent, and the per mu yield of wheat has jumped from the original 200 to 800 jin. Owing to the increase

of organic matter in the soil, the application of chemical fertilizers has been reduced correspondingly. For this reason, the production costs of grain have fallen dramatically. The expenses incurred in producing one jin of wheat have dropped from the original 10.08 cents to 0.47 cents. In Tong Xian, most of the land in the Xiaohizi Brigade of the Yongledian Commune consists of low-lying and saline-alkaline soil. Since 1973, this brigade, in carrying out crop rotation, has interplanted upward of 1,000 mu of sesbania with the third crop every year; this has played an obvious role in improving the soil, increasing soil fertility and raising grain production. In 1978, the per mu yield of grain in the entire brigade increased by 611 jin compared with 1972. Here, aside from other factors, the cultivation of sesbania was an important factor.

We suggest that attention should be paid to using the third crop to plant more sesbania in order to solve the contradictions between cultivating the land and letting it lie fallow. Especially in low-lying areas that become waterlogged easily, sandy barren land, or places where the harvest of the third crop is not good for several years in succession, an even greater effort should be made in this respect.

7682

CSO: 4007

BRIEFS

SIDELINE PRODUCTION--Harbin, 6 Oct--The total income from sideline production of Zhaodong County in Heilongjiang Province in 1978 reached more than 90 million yuan, increasing by more than 30 million yuan over 1976. The total savings deposits of commune members this year has reached 5.16 million yuan, an increase of more than 325,000 yuan over the same 1978 period. The total grain output reached 790 million jin in 1978, an increase of 260 million jin over that of 1976. This county turned in 280 million jin of grains to the state in 1978, an increase of 120 million yuan over that of 1976. The average income of commune members in this county reached 103 yuan per member in 1978, an increase of 39 yuan over 1976, and it is expected to reach 130 yuan this year. [Beijing XINHUA Domestic Service in Chinese 0701 GMT 6 Oct 79 OW]

SUIHUA COUNTY AFFORESTATION--Suihua County, Heilongjiang, has made rapid progress in afforestation. Networks of trees have been built around all of the over 6,194 rectangular raised fields on the county's farmland, and trees have been planted around the county's 923 natural villages, along 400 kilometers of highways, 1,000 kilometers of village roads and 1,100 li of drainage and irrigation canals. Forests now cover 350,000 mu of 8.9 percent of the county's area. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 2 Oct 79 OW]

CSO: 4007

BRIEFS

PLENTIFUL EARLY RICE CROP--The peasants in Huanggan Prefecture have reaped a bumper harvest of early rice. This year the areas sown to early rice were 100,000 mu less than last year. However, the total output was increased by 40 million jin, while the unit output increased by 30 jin. In this prefecture, there are more people than farmland. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 20 Sep 79 HK]

INCREASED OUTPUT OF GRAIN--The people in Zhangyang County reaped a total of 81 million jin of summer grain this year, an increase of 18.5 percent over last year. The county CCP Committee has also decided to launch emulation activities in the production of summer grain in 1980 with material rewards for the winners. The county plans to sow 447,000 mu this winter. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 2 Sep 79 HK]

INCREASED VEGETABLE PRODUCTION--According to statistics, 688.79 million jin of vegetables were sold in Wuhan markets from January to August of 1979, an increase of 9 million jin as compared with the corresponding period of 1978. Even during the idle season, each person in the municipality is insured to have 1 jin of vegetables each day. At the same time, 10 million jin of vegetables were transported to support fraternal provinces and municipalities. Popular vegetables including Indian lotus were supplied to compatriots in Hong Kong and Macao. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 25 Sep 79 HK]

CSO: 4007

ILLEGAL DAMS ON DONGTING LAKE HARM FISH RESOURCES

Letter of Complaint

Beijing RENMIN RIBAO in Chinese 25 Jul 79 p 2

[Letter to the editor: "Get Rid of the Dams at Junshan and Provide a Way of Life for the Fishes"]

[Text] Since 1971, the Junshan reed grass farm has been building regulating earth dams across channels where fishes migrate in Dongting Lake. Because of this, armed struggles have broken out on numerous occasions. After the promulgation by the State Council of the "Regulations Governing the Protection of the Multiplication of Aquatic Product Resources," the Junshan reed grass farm on the contrary began to reinforce and raise the height of the dams. By now, they have completed construction of one large permanent dam.

The eastern portion of Dongting Lake has hitherto been the spawning grounds of economic fishes. After the Junshan reed grass farm raised the height of the dams, the parent fishes in over 1 million mu of surface water have been cut off in their spawning migration to the eastern portion of the lake. The fishing population has formed an opinion concerning this matter and composed the following jingle: "In breeding time schools of fish rush for the spawning grounds/ Upon arrival at Junshan they are held back/ Dams have shut off entrances to the channels/ And fishes die carrying their spawn with them."

Because of the blockage by the Junshan dams, silt brought into the lake by the Yangtze River can no longer be discharged in time. As a result, a great deal of this silt has settled to the bottom of the lake, raising the bed year by year, and this has damaged the spawning grounds of the fishes, impaired the chances of the fish finding food, and shortened the high water period during the fishing open season.

Junshan is also where Dongting Lake empties into the Yangtze River; hence, it is an important route of communication. It is the hub of communication

and transportation for the several large farms located in the countries of Huarong, Nanxian and Yuanjiang and on Qianliang Lake. Owing to blockage by the Junshan dams, not only is navigation impossible when the water level is low, but also it is not safe to travel when the water level is high. On many occasions, motorboats have had breakdowns or accidents.

For years the broad masses of cadres and fishermen of the three fishery communes of Dongting in Yueyang Municipality, Wanzihu in Yuanjiang County and Qintan in Xiangyang County, and of the aquatic products farms and teams in lakeside areas have urgently requested that the Junshan dams be removed.

We resolutely urge that the matter be handled in accordance with Article 8 of Section 3 of the regulations, which states: "In rivers that fishes, crabs, etc., use as passages in their spawning migration, it is prohibited to catch them by blocking off the rivers," and that steps be taken to blow up the Junshan dams quickly and completely. Also, it is stipulated in Article 15 of Section 5 of the regulations that in regard to the cadres who "have taken the lead in aiding and abetting violators of these regulations," it is "necessary to investigate those who are responsible and, if necessary, take administrative or disciplinary action against them."

Hu Gui [5170 6311] of the Yueyang County
Commission for Control of Lakes and
Marshes, Hunan Province

Yue Long [1471 7893] of the Yueyang County
Bureau of Agriculture, Hunan Province

Reporter's Verification

Beijing RENMIN RIBAO in Chinese 25 Jul 79 p 2

[Article by RENMIN RIBAO reporter Liu Guilian [0491 2710 5571]:

"Fishes in Dongting Lake Need To Be Protected as Speedily as Possible"]

[Excerpts] Upon receiving a letter from Comrades Hu Gui [5170 6311] and Yue Long [1471 7893], we dispatched a reporter to verify their claims on the spot. According to our understanding following the investigation, it is a fact that dams have been built at the Junshan reed grass farm, but what is even more crucial is that the fish resources in the entire Dongting Lake are seriously threatened. Following is the investigative report of our reporter:

According to available statistics, there are over 100 types of fishes in Dongting Lake, and more than 30 of these have a high economic value.

Currently, however, the fish resources in Dongting Lake are being seriously disrupted and the catch has dropped dramatically. The different schools of fish which spawn in Dongting Lake are being reduced in number with each passing year. The yield of the migratory carp [*mylopharyngodon piceus*], grass fish [*ctenopharyngodon idellus*], bream [*hypophthalmichthys molitrix*] and tench [*aristichthys nobilis*] has dropped to an even larger extent. The valuable shad and silver fish are close to extinction.

Dongting Lake is suitable for the breeding and multiplying of fishes. Why is it that rapidly it is becoming barren of fish? The reasons are as follows:

Some years ago, under the slogan, "Seek food from the surface of the water," large areas of Dongting Lake were marked off to be reclaimed, and, as a result, the lake has been gradually reduced and fishery is being squeezed out. The eastern and southern portions of the lake are situated in the Yueyang Prefecture. In the early days following the liberation of the country, the outer lake was close to 4.3 million mu in area and that of the inner lake over 1 million mu. Nowadays, the outer lake has only 2 million mu of surface area and the inner lake has only 600,000 mu left. Especially after the reclamation of the flat and broad shallow beaches with their lush growth of aquatic plants, the fishes seemed unable to find their "hotel" and had no choice but to seek other places.

Damming up streams which blocked the passages of migrating fishes is another reason why the fish resources in Dongting Lake have been disrupted. During the Great Cultural Revolution, the system of administration was in confusion and there was not one unified control organ for the vast Dongting Lake. Aside from the fishing population in the 10 and more counties bordering the lake, people came from Shandong, Jiangsu, Hubei, Jiangxi and Anhui to fish in the lake. In order to make it convenient to fish, one group would build a dam here and another group would construct a dike there. By blocking the channels for the fishes to spawn, seek food and migrate, they have destroyed a natural fishing ground that had been perfect as it should be.

Pollution from industrial waste, chemical fertilizers and agricultural pesticides and the use of such harmful paraphernalia and methods as using poisoned fish as bait and dynamite have also been disastrous for the fishes in Dongting Lake. The waste water discharged by the main plant of the Hunan Provincial Chemical Plant has rendered the fishes in 8,000 mu of water surface in Linxiang County inedible.

Indiscriminate fishing is also a major reason why the fish resources are being harmed. Some fishermen are using increasingly larger nets with increasingly smaller meshes. They also do not concern themselves with observing the rules on fishing in prohibited areas or the closed seasons for fishing. Regardless of the size of the fishes, they haul them in with their seines just the same. Truly they are draining the lake in order to catch all the fish.

Reclamation, dam construction, pollution and unregulated fishing have all seriously disrupted the fishes' law of life.

Is there still hope for Dongting Lake?

Many fishermen say that if only the leading cadres make up their minds to rectify firmly those erroneous practices and thoroughly implement the "Regulations Governing the Protection of the Multiplication of Aquatic Product Resources" promulgated by the State Council, will there certainly be a rapid development of the fishes in Dongting Lake.

7682

CSO: 4007

BRIEFS

HYDROELECTRIC POWER STATIONS--At present, there are 3.48 million mu of farmland that guarantee good harvest irrespective of drought and floods in Hengyang prefecture, accounting for 72.6 percent of the total area of farmland. In the mountainous areas, 8.7 million mu are covered with trees. There are now 400 small hydroelectric power stations with a total of 44,000 kilowatts. In 1978, 10 medium reservoirs and hydroelectric power stations with 3,000 kilowatts were built within 1 year. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 2 Sep 79 HK]

CSO: 4007

BRIEFS

COTTON PRODUCTION--Nantong Prefecture, Jiangsu, has greatly increased cotton production. The total amount of ginned cotton in the prefecture accounts for 42 percent of the total cotton output in the province, and peasants in the prefecture have sold 96 percent of the cotton to the state. Both Qidong County and Rudong County in the prefecture harvested over one million dan of cotton each in 1978. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 6 Oct 79 OW]

CSO: 4007

JIANGXI

BRIEFS

SERIOUS INSECT PROBLEM--The party organizations at all levels in Jingan County have led the masses to destroy insects and protect seedlings. Affected by the climate, insect pests in this county are a very serious problem. Some 50 percent of the double-cropping late rice in this county was affected. The county has set up a command to prevent plant disease and eliminate insects. By now, 20,000 people throughout the county are working to resist insect pests. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 22 Sep 79 HK]

CSO: 4007

BRIEFS

NEI MONGGOL HERDSMEN--Hohhot, 6 Oct--A new type of plastic yurt, the tent-like home of Inner Mongolia's nomadic herdsman, that are wind, rain and cold-proof is now under trial-production in the autonomous region. Most herdsman's families in Inner Mongolia now have permanent homes. But for the present, only aged people and children stay in their homes. Herdsmen still have to lead a nomadic life and live in the traditional yurts while they are grazing their herds. The autonomous region has taken many measures to improve their living conditions and protect their health. Light wooden beds and furniture painted in national designs for use in yurts have been produced. Herdsmen formerly slept on the ground. Since beginning this year, the autonomous region has supplied 20 percent more yurts for herdsman than in the same 1978 period. Supplies of felt and door tapestries used for yurts have also been increased. [Text] [Beijing XINHUA in English 0704 GMT 6 Oct 79 OW]

CSO: 4020

BRIEFS

IMPORTANT RICE GROWING AREA--At present, the peasants in Hanzhong Prefecture are busily reaping the bumper harvest of autumn crops. The prefecture is a key area for growing rice in the province. The areas sown to rice account for three-fourths of the whole province and the output accounts for 75 percent of the output of the whole province. The average per mu yield of hybrid rice from 290,000 mu is generally 200-300 jin higher than the ordinary rice. The per mu yield of 85 percent of rice is 1,200 jin with the high-yielding rice reaching 1,500-1,600 jin. The prefecture has also trained 20,000 peasant technicians. [Xian Shaanxi Provincial Service in Mandarin 1300 GMT 3 Oct 79 HK]

CSO: 4007

SHANDONG

BRIEFS

RONGCHENG COUNTY AQUATIC PRODUCTS--Rongcheng County, Shandong, hauled in 160,000 dun of aquatic products in 1978, worth a total of 104 million yuan, equivalent to 36.7 percent of the county's total income from agricultural and sideline occupation production for the same year. [Beijing XINHUA Domestic Service in Chinese 0210 GMT 8 Oct 79 OW]

CSO: 4007

SICHUAN

BRIEFS

RICE PRODUCTION--The total output of Yilong County's 295,000 mu of rice fields this year reached 200 million jin, a 10 percent increase as compared with last year. [Chengdu Sichuan Provincial Service in Mandarin 2310 GMT 5 Oct 79 HK]

CSO: 4007

XINJIANG

BRIEFS

WHEAT PLANTING--Ili Kazak Autonomous Prefecture in Xinjiang had planted 535,000 mu of winter wheat and 41,700 mu of winter rape by 24 September. The prefecture had earlier won a bumper harvest of summer grain, output increasing by more than 10 percent. [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 5 Oct 79 OW]

CSO: 4007

ZHEJIANG

BRIEFS

FARMLAND IMPROVEMENT--At a recent conference on farmland capital construction, the Ruichang County CCP Committee in Zhejiang commended 72 advanced units which had distinguished themselves in developing farmland capital construction projects. During the past three years, the county had afforested 175,000 mu of land and planted trees in mountainous areas totaling over 460,000 mu. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 11 Oct 79 OW]

TOBACCO PRODUCTION--Xinchang County in Zhejiang has devoted efforts to tobacco growing. This year the county has reaped a bumper harvest of "spice" tobacco, with output expected to reach 4,400 dan, doubling the output of last year. By 22 September, more than 4,270 dan of "spice" tobacco had been purchased. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 3 Oct 79 OW]

COTTON PRODUCTION--Wenling County in Zhejiang has reaped a bumper harvest of cotton from its 5,200 mu of cotton fields, which yielded over 100 jin of ginned cotton per mu. By 20 September, county's supply and marketing departments had purchased more than 600,000 jin of unginned cotton. It is estimated that the amount of purchased cotton will double that of last year. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 3 Oct 79 OW]

FARMLAND CONSTRUCTION--In the past 4 years, Yongkang County in Zhejiang has mobilized manpower to build farmland capital construction projects. During that period, more than 20 million cubic meters of earth-stone work were removed; over 20 reservoirs with a storage capacity of over 1 million cubic meters were repaired, expanded or constructed; 26 reservoirs with a storage capacity of from 100,000 to 1 million cubic meters were expanded or constructed. This increased the county's water-storage capacity to 130 million cubic meters and enlarged its high- and stable-yield farms despite drought or waterlogging to over 70 percent of the total acreage of its farmland. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 3 Oct 79 OW]

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